PX602UL/PX602WL Installation Guide

Desktop and Ceiling Mount

Rev 1.0

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Product Description

Type: 1 chip DMD Reflection Type
PX602UL: 0.67 in. 2x LVDS DMD
PX602WL:0.65 in. 2x LVDS DMD

Dimensions: 19.84”(W) x 8.67”(H) x 20.55”(D)

Weight: PX Series: 19.7kg / 43.3 lbs

Resolution: PX602UL: 1920 x 1200 (16:10)
PX602WL:1280 x 800 (16:10)

Brightness: PX602UL: 6000 Lumens
PX602WL: 6000 Lumens

Fan Noise: PX Series: 39 dB / 34dB @ 1 meter

Power Consumption: PX Series: 530W (max)

BTU’s: PX Series: 1810.05 BTU/hour

Network Ready, integrated wired networking
Power: Lens Shift, Horizontal & Vertical /Zoom/ Focus

Lens Specifications

NP33ZL:	Throw Ratio: ~ 0.75-0.95:1 Screen Sizes: 50”-300”	Focal Length: 11.4mm F/#: 2.3 – 2.57	**NP37ZL:**	Throw Ratio: 1.60 -3.07:1 Screen Sizes: 50” - 300”	Focal Length: 22.6 – 42.9mm F/#: 2.3 – 2.39
NP34ZL:	Throw Ratio: ~1.00 - 1.28:1 Screen Sizes: 50” - 300”	Focal Length: 14.0 – 18.0mm F/#: 2.3 – 2.57	**NP38ZL:**	Throw Ratio: 2.9 -5.5:1 Screen Sizes: 50” - 300”	Focal Length: 22.6 – 42.9mm F/#: 2.3 – 2.39
NP36ZL:	Throw Ratio: ~1.28 – 1.61:1 Screen Sizes: 50” – 300”	Focal Length: 18.1 – 22.6mm F/#: 2.0 – 2.32			

Screen/Aspect Ratio

4:3, 16:9 and 16:10 screens are fully supported with proper aspect ratio control for both type sources using NEC developed scaling technology. Menu selections have settings for each screen type and aspect ratio control for each source type.

Notes

- For screen sizes not indicated on the projection tables, use the formulas below.
  If the figures on the tables do not match the results of formulas, use the figures in the table..
- Distances are in inches, for millimeters multiply by 25.4.
- Distances may vary ±5%.

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Formulas: 16:10 Aspect Ratio (PX602WL—WXGA)

The Projection Formulas use the image width for calculation. Image width is the same for all aspect ratios, only vertical image size varies. For proper projector placement, determine the image width for a desired screen size. Use the Screen Formulas below to calculate all screen dimensions. Plug in the image width for "W" in the Projection Formulas.
Refer to the diagrams and charts for popular screen sizes on page 2 and 3:

Projection Formulas:

NP33FL:	**C** = 0.817W – 1.54		
NP34ZL:	**C**(Wide) = 1.017W – 1.193	------	**C**(Tele) = 1.300W – 1.087
NP36ZL:	**C**(Wide) = 1.300W – 1.130	------	**C**(Tele) = 1.620W – 1.138
NP37ZL:	**C**(Wide) = 1.625W – 2.358	------	**C**(Tele) = 3.097W – 2.213
NP38ZL:	**C**(Wide) = 4.580W – 5.415	------	**C**(Tele) = 8.603W – 5.352

Definitions:

W = Image Width
H = Image Height (size)
C = Throw distance

16:10 Screen Formulas

W = H x 16/10
H = W x 10/16
Screen Diagonal = W x 18.868/16

16:9 Screen Formulas

W = H x 16/9
H = W x 9/16
Screen Diagonal = W x 18.358/16

Distance Chart for popular 16:10 Screens (WXGA)

Screen Size (16:10)			Zoom Lenses				
			NP33ZL	NP34ZL	NP36ZL	NP37ZL	NP38ZL
Diagonal	Width(W)	Height (H)	0.75-0.95:1	0.95-1.20:1	1.28-1.60-1	1.52-2.92:1	2.90-5.50:1
inches	inches	inches	inches	inches	inches	inches	inches
60	51	32	-	50.7 - 65.2	65.2 - 81.5	80.5 - 155.7	-
68	58	36	-	57.8 - 74.3	74.3 - 92.8	91.9 - 177.4	-
72	61	38	-	60.8 - 78.2	78.2 - 97.7	96.8 - 186.7	-
85	72	45	-	72.0 - 92.5	92.5 - 115.5	114.6 - 220.8	-
108	92	58	-	92.4 - 118.5	118.5 - 147.9	147.1 - 282.7	-
113	96	60	-	96.4 - 123.7	123.7 - 154.4	153.6 - 295.1	-
130	110	69	-	110.7 - 141.9	141.9 - 177.1	176.4 - 338.5	-
137	116	73	-	116.8 - 149.7	149.7 - 186.8	186.1 - 357.0	-
164	139	87	-	140.2 - 179.6	179.6 - 224.0	223.5 - 428.3	-
189	160	100	-	161.5 - 206.9	206.9 - 258.1	257.6 - 493.3	-
208	176	110	-	177.8 - 227.7	227.7 - 284.0	283.6 - 542.9	-
226	192	120	-	194.1 - 248.5	248.5 - 309.9	309.6 - 592.4	-
270	229	143	-	231.7 - 296.6	296.6 - 369.8	369.8 - 707.0	-

Distance Chart using 16:10 native projector with 16:9 Image (720p)

Screen Size (16:9)			Zoom Lenses				
			NP33ZL	NP34ZL	NP36ZL	NP37ZL	NP38ZL
Diagonal	Width(W)	Height (H)	0.75-0.95:1	0.95-1.20:1	1.28-1.60-1	1.52-2.92:1	2.90-5.50:1
inches	inches	inches	inches	inches	inches	inches	inches
59	51	29	-	50.7 - 65.2	65.2 - 81.5	80.5 - 155.7	-
67	58	33	-	57.8 - 74.3	74.3 - 92.8	91.9 - 177.4	-
70	61	34	-	60.8 - 78.2	78.2 - 97.7	96.8 - 186.7	-
83	72	41	-	72.0 - 92.5	92.5 - 115.5	114.6 - 220.8	-
106	92	52	-	92.4 - 118.5	118.5 - 147.9	147.1 - 282.7	-
110	96	54	-	96.4 - 123.7	123.7 - 154.4	153.6 - 295.1	-
126	110	62	-	110.7 - 141.9	141.9 - 177.1	176.4 - 338.5	-
133	116	65	-	116.8 - 149.7	149.7 - 186.8	186.1 - 357.0	-
159	139	78	-	140.2 - 179.6	179.6 - 224.0	223.5 - 428.3	-
184	160	90	-	161.5 - 206.9	206.9 - 258.1	257.6 - 493.3	-
202	176	99	-	177.8 - 227.7	227.7 - 284.0	283.6 - 542.9	-
220	192	108	-	194.1 - 248.5	248.5 - 309.9	309.6 - 592.4	-
263	229	129	-	231.7 - 296.6	296.6 - 369.8	369.8 - 707.0	-

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Lens Specifications

NP33ZL:	Throw Ratio: ~ 0.75-0.95:1 Screen Sizes: 50”-300”	Focal Length: 11.4mm F/#: 2.3 – 2.57	**NP37ZL:**	Throw Ratio: 1.52 -2.92:1 Screen Sizes: 50” - 300”	Focal Length: 22.6 – 42.9mm F/#: 2.3 – 2.39
NP34ZL:	Throw Ratio: ~0.95 - 1.20:1 Screen Sizes: 50” - 300”	Focal Length: 14.0 – 18.0mm F/#: 2.3 – 2.57	**NP38ZL:**	Throw Ratio: 2.9 -5.5:1 Screen Sizes: 50” - 300”	Focal Length: 22.6 – 42.9mm F/#: 2.3 – 2.39
NP35ZL:	Throw Ratio: ~1.23 – 1.52:1 Screen Sizes: 50” – 300”	Focal Length: 18.1 – 22.6mm F/#: 2.0 – 2.32			

Formulas: 16:10 Aspect Ratio (PX602UL—WUXGA)

The Projection Formulas use the image width for calculation. Image width is the same for all aspect ratios, only vertical image size varies. For proper projector placement, determine the image width for a desired screen size. Use the Screen Formulas below to calculate all screen dimensions. Plug in the image width for “W” in the Projection Formulas.
Refer to the diagrams and charts for popular screen sizes on page 2 and 3:

Projection Formulas:

NP33FL: **C** = 0.794W – 1.85
NP34ZL: **C**(Wide) = 0.966W –1.181 ------ **C**(Tele) = 1.240W – 1.118
NP35ZL: **C**(Wide) = 1.235W – 1.217 ------ **C**(Tele) = 1.546W – 1.185
NP37ZL: **C**(Wide) = 1.546W – 2.339 ------ **C**(Tele) = 2.948W – 2.039
NP38ZL: **C**(Wide) = 3.654W – 5.319 ------ **C**(Tele) = 5.492W – 5.299

Definitions:

W = Image Width
H = Image Height (size)
C = Throw distance

16:10 Screen Formulas

W = H x 16/10
H = W x 10/16
Screen Diagonal = W x 18.868/16

16:9 Screen Formulas

W = H x 16/9
H = W x 9/16
Screen Diagonal = W x 18.358/16

Distance Chart for popular 16:10 Screens (WUXGA)

Screen Size (16:10)			Zoom Lenses				
			NP33ZL	NP34ZL	NP35ZL	NP37ZL	NP38ZL
Diagonal	Width(W)	Height (H)	0.75-0.95:1	0.95-1.20:1	1.23-1.52-1	1.52-2.92:1	2.90-5.50:1
inches	inches	inches	inches	inches	inches	inches	inches
60	51	32	-	48.3 - 62.4	62.0 - 78.0	76.8 148.9	
68	58	36	-	54.5 - 70.3	69.9 - 87.9	86.7 167.8	
72	61	38	-	57.6 - 74.3	73.9 - 92.8	91.7 177.2	
85	72	45	-	68.4 - 88.2	87.7 - 110.1	109.0 - 210.2	-
108	92	57.5	-	87.7 - 113.0	112.4 - 141.0	139.9 - 269.2	-
113	96	60	-	91.6 - 117.9	117.3 - 147.2	146.1 - 281.0	-
130	110	69	-	105.5 - 135.8	135.1 - 169.5	168.3 - 323.4	-
137	116	72.5	-	110.9 - 142.7	142.0 - 178.2	177.0 - 339.9	-
164	139	87	-	133.3 - 171.5	170.7 - 214.0	212.9 - 408.3	-
189	160	100	-	153.4 - 197.3	196.4 - 246.2	245.0 - 469.6	-
208	176	110	-	168.8 - 217.1	216.1 - 270.9	269.8 - 516.8	-
226	192	120	-	184.3 - 237.0	235.9 - 295.6	294.5 - 564.0	-
270	229	143	-	219.8 - 282.6	281.4 - 352.5	351.4 - 672.5	-
300	254	159	299.2 - 389.6	376.0 - 752.4	747.3 - 1198.4	1181.3 - 1826.5	1377.5 - 2154.3

Distance Chart using 16:10 native projector with 16:9 Image (1080p)

Screen Size (16:9)			Zoom Lenses				
			NP33ZL	NP34ZL	NP35ZL	NP37ZL	NP38ZL
Diagonal	Width(W)	Height (H)	0.75-0.95:1	0.95-1.20:1	1.23-1.52-1	1.52-2.92:1	2.90-5.50:1
inches	inches	inches	inches	inches	inches	inches	inches
59	51	29	-	48.1 - 62.1	61.8 - 77.7	76.5 - 148.3	-
67	58	33	-	54.8 - 70.8	70.4 - 88.5	87.3 - 168.9	-
70	61	34	-	57.7 - 74.5	74.1 - 93.1	92.0 - 177.8	-
83	72	41	-	68.4 - 88.2	87.7 - 110.1	109.0 - 210.2	-
106	92	52	-	87.7 - 113.0	112.4 - 141.0	139.9 - 269.2	-
110	96	54	-	91.6 - 117.9	117.3 - 147.2	146.1 - 281.0	-
126	110	62	-	105.1 - 135.3	134.6 - 168.9	167.7 - 322.2	-
133	116	65	-	110.9 - 142.7	142.0 - 178.2	177.0 - 339.9	-
159	139	78	-	133.1 - 171.2	170.4 - 213.7	212.6 - 407.7	-
184	160	90	-	153.4 - 197.3	196.4 - 246.2	245.0 - 469.6	-
202	176	99	-	168.8 - 217.1	216.1 - 270.9	269.8 - 516.8	-
220	192	108	-	184.3 - 237.0	235.9 - 295.6	294.5 - 564.0	-
263	229	129	-	220.0 - 282.8	281.6 - 352.8	351.7 - 673.1	-

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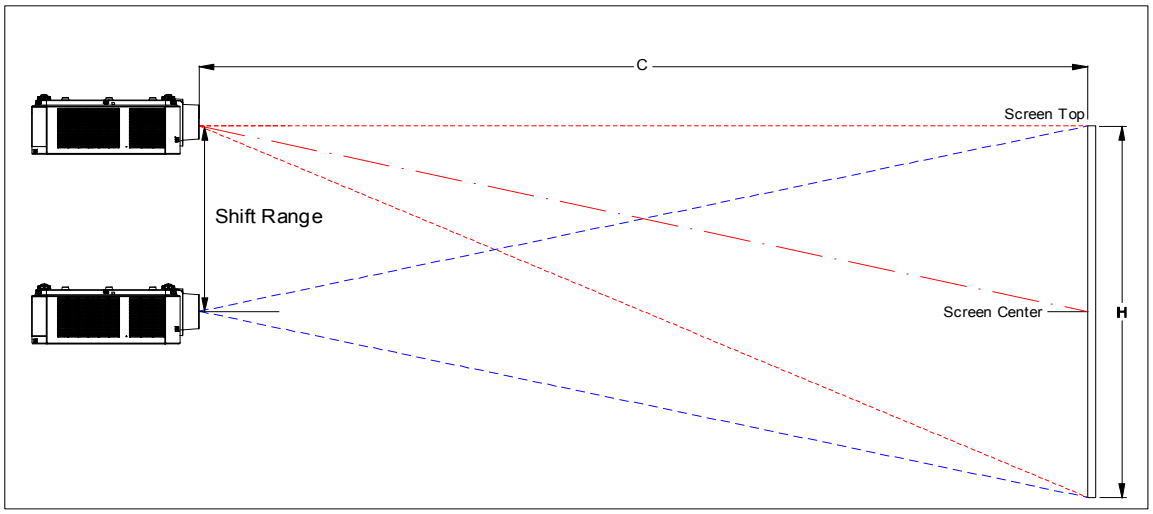
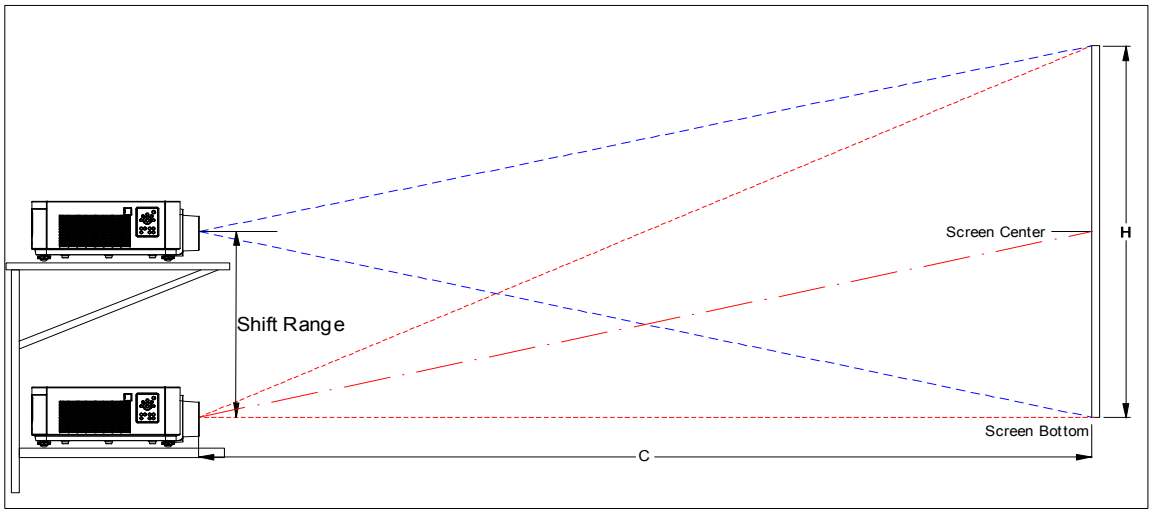
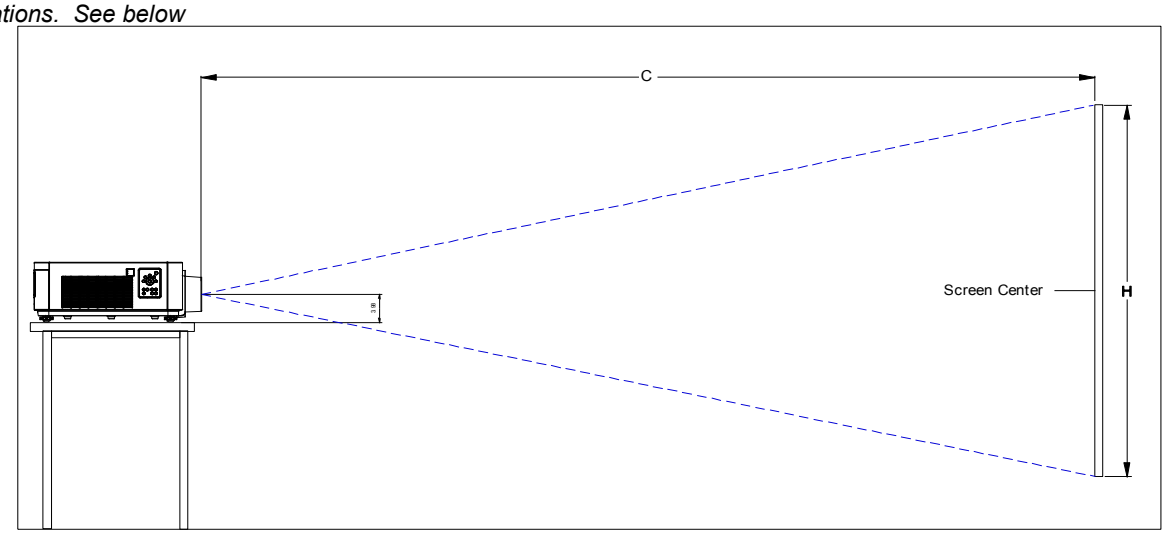
Ceiling Mount Installation



Desktop Installation

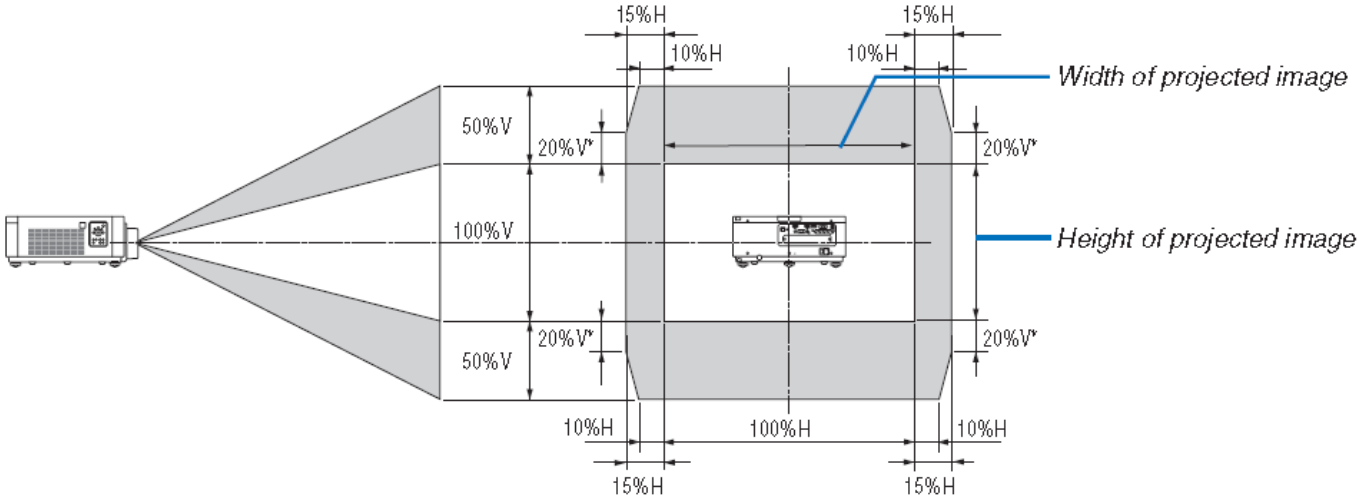


Note: *Lens Shift Feature is not available for the NP06FL and NP16FL. This lens should only be used for "zero degree"/"no-offset" applications. See below*



Lens Shift Adjustable Range

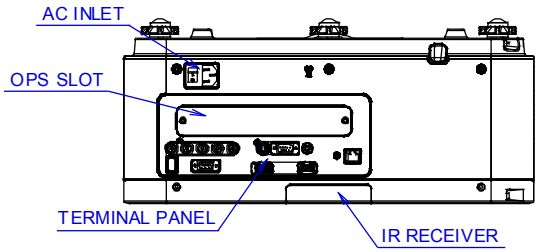
Lens Shift Range for Desktop and Ceiling Mount Application
The diagram below shows the location of the image position in the lens for the PX602UL. The PX602WL has a maximum vertical lens shift of +/- 30%. The lens can be shifted within the shaded area as shown using the normal projection position as a starting point.

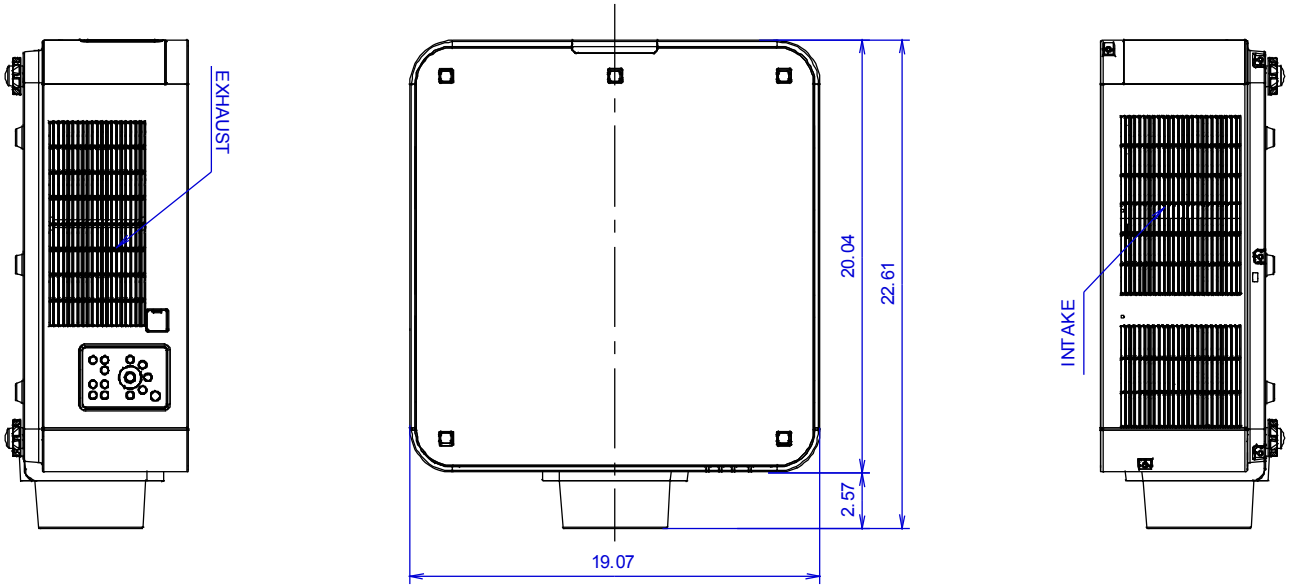


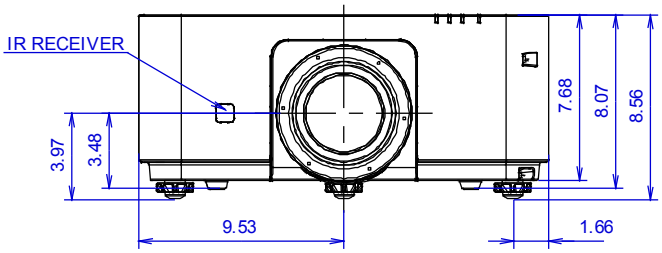
Note: Projector is set out of the box at center position, which is how it is depicted above.
(W: width of projected image, H: height of projected image)

Cabinet Dimensions

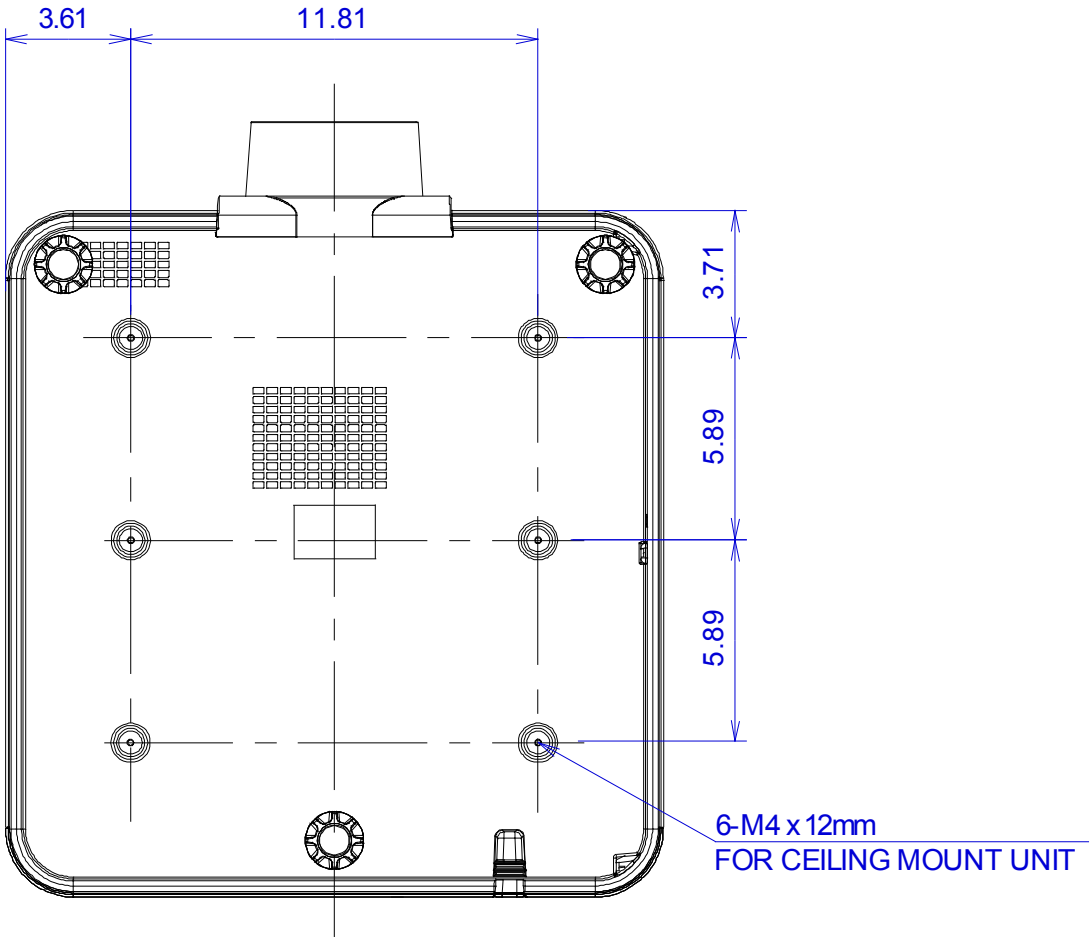
The following diagrams show the cabinet dimensions for the PX602UL_PX602WL.
Dimensions are in inches. For millimeters multiply by 25.4.
Note: Dimensions below shown with the NP35ZL lens





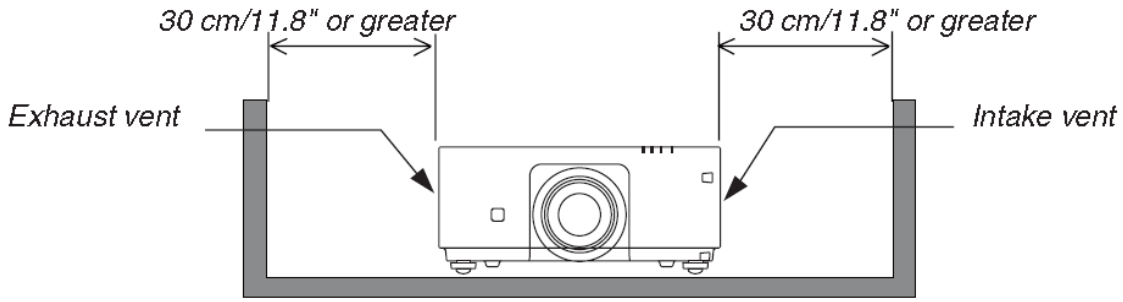


Cabinet Dimensions

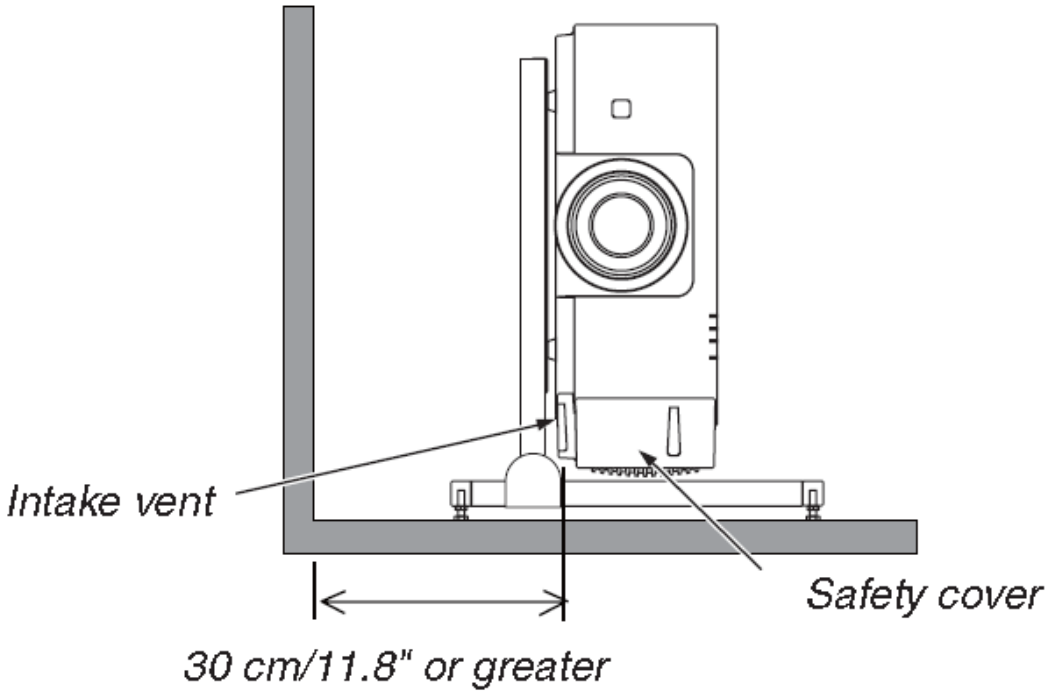


Ventilation Requirements

- If there are walls on boths sides of the projector :



- If installed on a portrait stand :



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Input Panel

Control Panel

PC Control Codes

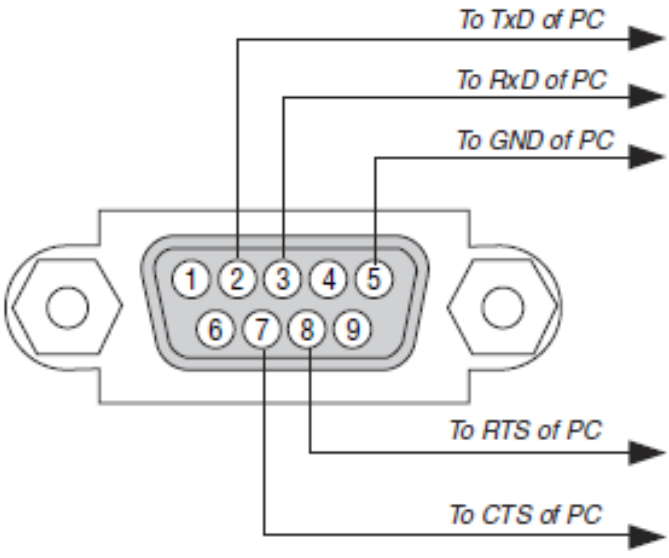
Function	Code Data							
POWER ON	02H	00H	00H	00H	00H	02H		
POWER OFF	02H	01H	00H	00H	00H	03H		
INPUT SELECT HDMI	02H	03H	00H	00H	02H	01H	01H	09H
INPUT SELECT DISPLAYPORT	02H	03H	00H	00H	02H	01H	A6H	AEH
INPUT SELECT BNC	02H	03H	00H	00H	02H	01H	02H	0AH
INPUT SELECT BNC (CV)	02H	03H	00H	00H	02H	01H	06H	0EH
INPUT SELECT BNC (Y/C)	02H	03H	00H	00H	02H	01H	0BH	13H
INPUT SELECT COMPUTER	02H	03H	00H	00H	02H	01H	01H	09H
INPUT SELECT HDBaseT	02H	03H	00H	00H	02H	01H	20H	28H
INPUT SELECT SLOT	02H	03H	00H	00H	02H	01H	ABH	B3H
PICTURE MUTE ON	02H	10H	00H	00H	00H	12H		
PICTURE MUTE OFF	02H	11H	00H	00H	00H	13H		

Cable Connection

Communication Protocol:

Baud Rate: 38400 bps (for cable lengths longer than 20', it is recommended changing to 9600 bps in setup menu)
Data Length: 8 bits
Parity: No Parity
Stop Bit: One bit
X on/off: None
Communications: Full duplex

PC Control Connector (D-Sub 9P)



Note 1 : *Pins 1, 4, 6, and 9 are used inside the projector.*
Note 2: *For long cable runs it is recommended to set communication speed within the projector to 9600 bps.*
Note 3: *Jumper "Request to Send" and "Clear to Send" together on both ends of the cable to simplify cable connection.*